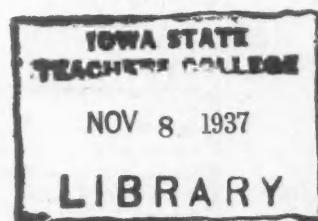


MAN DESK.

The Cornell Countryman



Dairy Issue

Volume XXXV

NOVEMBER, 1937

Number 2

Dealer's OF THE NEXT Decade

Agricultural engineering students of Oregon State College, enroute to the 1937 ASAE annual meeting, at entrance to Case engineering department and machinery display rooms at Racine, Wis. They also visited the Case main and tractor works.



When your father stood where now you stand, at the threshold of his career, the typical farm implement dealer was a more or less retired farmer. His practical farm experience was training enough to sell the simple tools of his time. For expert service, for handling of credits, and even for capital, he relied mainly on his manufacturer. He was in fact, and often in name, an "agent."

Since then has come a quiet revolution, now nearly completed. As the power age in agriculture has taken toil from the back of the farmer, so has it added burdens to the brain of the farm equipment dealer. He has become an independent business man, with correspondingly greater responsibilities and rewards. Already the better dealer takes care of his own expert service, arranges financing of credit sales, has his own working capital.

No longer is it a chance for older men to take things easy, but a career for young men to tackle. It calls for trained familiarity with farm practice and farm management — not the agriculture of yesterday, but of tomorrow. Most of the dealers of the next decade will come from the campus of today.

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The Cornell Countryman

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Attention

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You've guessed it—they are the visitors at Cornell's annual

FARM AND HOME WEEK

Plan now to be one of the ten thousand who will attend the more than four hundred lectures, demonstrations, and entertainment features offered this year. The dates are

FEBRUARY 14 to 19, 1938

The Dairy Industry Grows

By H. J. Brueckner

THE dairy industry is one of the most valuable and yet oldest industries in the world. Like most enterprises, our billion dollar dairy industry seems to have made almost unbelievable advances within the last two or three decades. It was during the early part of this century that pasteurization of milk really started commanding recognition. The older doctors have told us what this discovery has meant to humanity. Not long after commercial pasteurization started to become popular did we hear of a group of farsighted dairymen and physicians propose and later carry out a program to give the consuming public a high quality milk in the form of "Certified Milk." This is the ideal at which all dairymen should aim.

We have had a few really good dairy scientists for upwards of a half century. It has been in only very recent years, however, that the dairy scientists have been growing in numbers and therefore achievements. Many of us, who have not much more than passed the one score and ten year mark, may think that there has always been the cheese usually called "process cheese". Process cheese you probably know is a cheese made by a blending of mild and strong flavored cheeses of the same variety. The various aged cheeses are ground. Small amounts of salts to prevent the fats and proteins of the cheese from separating during the heating process are added. The heating or pasteurizing process carried out in large vats or kettles melts the cheese into a homogenous mass. The cheese is allowed to flow into the finished containers directly from these processing kettles. The consistency is very much like Welsh rarebit. The cheese solidifies in the containers in which the cheese is sold. There is no need for holding or ripening. The various cheeses making up Process Cheese are all aged or ripened before processing.

THE manufacture of casein plastics is relatively new. In addition to the plastics, which is one of the largest and best known uses to which casein is put, the casein or curd of milk is used in the making of a vast number of goods. A few of these are airplane dope, leather finishing, wall sealer, paint, and glue.

The manufacture of all these things is interesting, but how many of you have ever seen casein transformed

into plastics? The dried casein exhibiting the proper chemical and physical properties has the desired color added and then is mixed in large mixing machines. As the dough-like appearing mass is taken from the mixers, it is put through molding or forming machines. Out of these machines come rods for knitting needles, tubes for fountain pens, thin and thick sheets for buttons, belt buckles, letter openers, and the like. The drying and curing process takes place during a three or four months' period in a formaldehyde bath.



MORE recent than the making of casein plastics is the fortification of milk with vitamins. The most common one of these is vitamin D, the sunshine vitamin. Vitamin D enriched milk has grown in popularity very rapidly since it was first introduced some four or five years ago. There is but a small amount of vitamin D in normal milk. The quantity of this vitamin is increased in milk by one of three methods. Cows are fed yeast which has had its vitamin content increased many fold by irradiation or exposure to ultraviolet light. In the cow's body, a portion of the vitamin D in the yeast is put into the milk. A rather definite amount of vitamin D goes into the milk from the ingested yeast. Due to this fact, the vitamin D potency of the milk can be rather definitely controlled. A second method for increasing the amount of vitamin D in milk or any dairy product is by the direct addition of vitamin D in the form of a concentrate of one kind and another. The vitamin D rich fraction of cod liver oil is the base of most of these concentrates. As little or as much of the concentrate as one wishes may be added to the milk or milk product. The third method is to expose a thin film of milk to ultraviolet rays from a carbon arc lamp.

ONE of the constituents of milk which has a rather definite therapeutic value is the milk sugar or lactose. The regular commercial lac-

tose is rather insoluble and lacking in sweetness.

It has only been within the last five or six years that a dairy scientist has been able to develop a commercial method for making the beta form of lactose. This more soluble and sweeter lactose is meeting with great favor in the medical world and is gradually replacing the alpha form for medicinal purposes. Lactose is made from the whey remaining after the casein has been precipitated from skim-milk.

A cured cheese such as cheddar or the regular American cheese tends to dry out and mold during curing unless ripening conditions are almost ideal. Again the dairy scientists have developed a method to reduce such damage. The American cheese is made in the regular way but pressed in hoops or forms, the diameters of which are the same as the diameters desired in the finished cheese. Immediately after pressing, which usually requires one day, the cheese is cut into pieces that just fill the small cans in which the cheese is to be cured and sold at retail. Gases of one kind or another are developed during the ripening process. A small ball valve in one end of the can permits gases to get out of the can but keeps out air. This canned cheese cures very rapidly and develops no wasteful rind.

WITHIN the last year or two we heard of fresh evaporated milk. This is milk which has been concentrated about two to one. The rather unpopular flavor present in canned evaporated milk is due to the sterilization process. This fresh product is not sterilized so when mixed with equal parts of water cannot be distinguished from fresh whole milk. The fresh evaporated milk in bottles or special cans must be refrigerated to preserve it so cannot be kept much longer than fresh whole milk. The concentrated milk, if it ever becomes popular, should make it possible for an individual milk salesman to serve more customers, at less cost.

Well, one could go on for some time enumerating the new things developing every day in the dairy industry. I have attempted to give you a brief picture of the more important recent discoveries and a better understanding of what modern scientists interested in milk and its products have been able to develop of benefit to all.

Digging Into Dairy Records

By Leland W. Lamb

REEKING with romance, seething with success, or full of failure are the stories told by the record books of the dairymen whose cows are on test in the Dairy Herd Improvement Associations. All one needs to do is to take a set of these books, accumulated through a period of a few years of testing to find mute evidence of the dashing of hopes or of the fulfillment of expectations as revealed by these records. Through an organized system of digging into these records we, of the Animal Husbandry Department are bringing these stories to light.

From them, we are analyzing the reasons for success or for failure as the case may be. We are discovering new facts concerning the way in which characteristics for milk production are transmitted from parent to offspring. With the eager cooperation of dairymen and their testers we are evolving new principles for selecting breeding stock. And we are putting these principles to test in the farmers' own herds.

Today, one hundred eighteen young men, called dairy herd improvement association testers, are busily engaged in testing for milk and butterfat production approximately 61,000 cows on 2,700 New York state dairy farms. These 2,700 dairymen are all members of cooperative organizations known as Dairy Herd Improvement Associations.

The first object of the work was to secure information for culling. The idea of cooperative testing of cows spread and it wasn't long before leaders in the dairy industry realized the possibilities of these associations as sources of feeding information. Today much of the knowledge we have on the subject of feeding dairy cows has been gained as a result of digging into the records of cows on Dairy Herd Improvement Association test.

Today we have farmers who use the Dairy Herd Improvement Association merely as a means of checking the test used by the milk plant as a basis for paying for those farmers' milk. Others make use of the production records as a basis for culling the low producers from their herds. Still others make use of the feeding information. They find that they can often save many times the cost of their testing by feeding according to the production of their cows. Still other farmers use the

production records as a basis for their breeding programs.

Records Reveal Relationship Between Feeding and Breeding

Feeding analyses have shown over and over again the utter futility of trying to make a profitable livelihood from a herd of improperly fed dairy cows. These records have shown the impossibility of profitable production from cows of poor breeding regardless of how well they are fed. From these records, as from nothing else, has come an appreciation of the fact that a cow must be bred for milk production if she is to produce.

OUR state is known as a pasture and roughage producing section. It behooves our farmers, therefore, to make full use of the pasture and the roughage they produce. Most of the concentrates or grain which they feed to their cows must be purchased. Records kept on many herds have demonstrated in a most convincing manner the reductions in production costs made possible by a full utilization of high quality roughages and adequately improved pastures.

Records show that there are but two ways to get a herd with inheritance for a high level of production. One, theoretically at least, is to buy them. Another is to breed them. Records also show that unless a man possesses a fat pocketbook or a liberal credit he cannot hope to buy high producing cows. There are two reasons for this situation. One is that the good cows in most dairymen's herds are not for sale. The other is that if these good cows are for sale the prices asked are usually prohibitive except to the more affluent of prospective purchasers.

FOR many years farmer dairymen, dependent upon their dairy cows for a living have been paying high prices for herd sires out of the highly advertised herds of men who in large part, until recent years, have pursued a policy of selecting only the very best of their cows for test. These "test cows" were then given every opportunity to make the highest record of which they were capable. Knee deep in straw in comfortable box stalls, milked three and often four times a day, and with appetites tickled with all kinds of delectable bovine delicacies, sleek and fat from an excess of nutrients, these cows have been pushed, often to the ruin

of their udders, in the hope of making a "world's record."

Thousands of dairymen who have based their breeding programs on sons or relatives of cows whose records have been made in this way have been disappointed in the results secured. They have found that these high pressure bulls did not, in most cases, sire daughters in any way comparable to these, "magnificent" highly advertised "matrons of the test barn."

Transmitting Ability Key to Success in Breeding

Since selected individuals in a group usually are not representative of the entire group, breeders generally are coming to realize that they must study the entire group if any thing like an accurate estimate is to be made of the nature of that group. Therefore, a system of testing that will include the entire group is gaining in popularity. The dairy breed organizations have all adopted the Herd Test as their method of testing entire herds. The Dairy Herd Improvement Association does the same, but includes grades as well as purebreds.

WHEN we start digging into dairy records we will find in some instances cows of mediocre merit with outstanding families descended from them. In other cases cows of exceptionally high producing ability lack the ability to pass it on.

We find herds in which these outstanding herd sires and outstanding cow families both appear. These records are complete stories of the transmitting ability of both. Where these two lines cross we find the most dependable source of herd sires for other breeders. In this way dairy farmers can locate sires for their herds with a complete history of the transmitting ability of both sides of their ancestry. Since they buy bulls to head their own herds for the transmitting ability of their ancestors.

In this way much of the gamble is being taken from breeding dairy cattle. It is only made possible by the dairymen themselves testing their entire herds and then offering their records for study. Then when trained geneticists dig into these records and produce the facts contained we have an example of a real partnership thru which dairy cattle can be most effectively improved through breeding.

A Life Record In Dairy

By Harper Johnson '38

I THINK I must have invented the least thing ever patented," says Professor Hugh Troy, formerly of the dairy chemistry department at Cornell. The patent concerns a little gadget on the tube of a skim milk testing bottle. Professor Troy found that, in testing, often gases caused by mixing milk and acid in the bottle could not escape until they had forced the hot acid mixture out, often burning the clothes and skin of the operator. Finding what he believed was a remedy, he had several bottles made, each with a small vent for the gases. The bottles worked and "the least thing ever patented" saved headaches, skim-milk samples, epidermis, and clutching of testers in the labs in which Professor Troy instructed and in which he had spent much of his time since coming to Cornell as a freshman in 1892.

As student, instructor, assistant professor, and as professor Troy moved three times with the Dairy Chemistry laboratories to new quarters.

WHEN the laboratories moved in 1897 from the original Dairy Industry Building on the site of Bailey Hall to Goldwyn Smith, Dean Bailey of the College of Agriculture gave the lumber from the old building to Professor Needham for a Biology laboratory on Renwick Flats. The biology lab burned down in 1904, two years before the Dairy Industry Department again moved, this time to Roberts Hall. Here the Dairy Chemistry lab was in the basement, the testing room on the second floor. When the Dairy Industry Department moved in 1926 to its final home in the present Dairy Building, Professor Troy planned the chemistry laboratories and selected equipment. The arrangement has changed little to the present day. As an undergraduate, Hugh Troy took a great deal of chemistry in the arts college, and specialized in animal industry under Professor Wing.

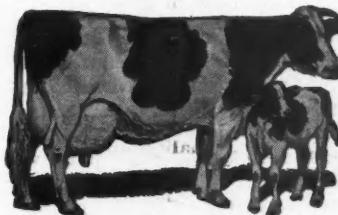
"Professor Wing was," says Professor Troy, "the department." Professor Wing arranged his courses to teach during three University terms, feeds and feeding in the fall, breeds and breeding during the winter, and in the spring, dairy industry.

Hugh Troy took dairy industry in the old building in a tiny lab just large enough for two students and the instructor, Professor Wing. The

students, two at a time, learned to test milk and to make butter and cheese during six half-day lab periods spread over two weeks. Hugh's partner in the course, Raymond A. Pearson, became head of dairy industry at Cornell when in 1902 the animal industry department was split to form the dairy industry and the animal husbandry departments. Professor Wing continued in the University as head of animal husbandry.

MR. TROY took the state chemist's examination in November 1896, was number one on the list, and received his appointment as State Chemist in the Spring of 1897, remaining at Cornell for graduate work.

"My work here hasn't been very spectacular," says Professor Troy. "I just plodded along."



He must have plodded right along most of the time. Even as student, in addition to scholastic activities, he took an active part in crew and rowed in many of Courtney's historic Cornell races. As a graduate, in addition to analyzing samples of foods and milk products for the State and instructing in the University, he coached the oarsmen of the Cascadilla Prep school.

Just before the World War Instructor Troy had his largest classes in dairy chemistry, often 300 students at one time. Professor Troy and his assistants ran four laboratory periods a day. At the same time 1200 or more samples of food often waited to be analyzed. The analysis required absolute accuracy by Troy and his three assistants as their findings often served as evidence in court. His evidence in one case, resulted in the payment of \$6,000 dollars in fines and the complete break-up of an evaporated milk company which had substituted vegetable fat for butter-fat in its product.

In addition to work as chemist and instructor in the laboratories at Cornell, he was for two terms President of the New York State Dairymen's

Association. During the World War he traveled from St. Louis to Boston for the Bureau of Markets, advising on the best use of all food products to stop waste.

HE PUBLISHED the results of his research and experiments in bulletins and books, putting into print more accurate methods of analysis and improvements in laboratory technique. "The Technical Control of Dairy Products," written with Mr. Timothy Mojonier, a Chicago manufacturer of dairy equipment, resulted from research done during summer vacations and one sabbatic leave from the College. "The Quantitative Determination of Lactic Acid in Milk and Dairy Products", a bulletin by Professor Troy, explained a method to detect as little as two thousandths of one per cent lactic acid in a product. For the first time one could detect the difference in butter made from sweet cream and that made from slightly sour cream which is vastly inferior in keeping qualities. Dairy companies saved thousands of dollars using this new method of analysis. "Questions and Answers on Milk and Milk Testing" printed in 1908, still has good sale among persons wanting non-technical information on testing milk. After the Great War, the State Department of England instructed soldiers about to leave the army in peace-time occupations. They chose as a text one of Professor Troy's bulletins on testing the composition of dairy products.

Graduating in 1896, Hugh Troy served as chemist, chemistry instructor, assistant professor, and in 1912 as a professor. When he retired in 1936 he officially ended a career of more than forty years as an active "Cornell man," student, instructor, and professor.

O'Kane Wins Alpha Zeta Cup

Daniel J. O'Kane, Jr. '40, was presented with the Alpha Zeta scholarship cup in orientation class October 7, by the president of Cornell Chapter of Alpha Zeta, Ray Deuel. This cup is presented each year to the freshman in agriculture of the previous year who has maintained the highest scholastic standing. Daniel O'Kane, Jr. is a student of bacteriology. His average for 33 hours work in the first year is 89.69%. His home is in Great Neck, Long Island.

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Ithaca, New York, November, 1937

Number 2

Dairy Team in New Orleans

The Cornell Dairy Products judging team is attending the Dairy Industries Exposition at New Orleans, Louisiana. H. G. Webster '38, J. G. Brereton '38, H. G. Dissly '38, R. J. Keane '38, and S. N. Friedman '38, are making the trip with their coach, Professor E. S. Guthrie. The contest consists of judging milk, cheese, butter, and ice cream.

There are several scholarships awarded as prizes. The Dairy and Ice Cream Manufacturing Supplies Association furnishes these prizes. The team will be competing with other Agricultural College teams from leading dairy states in this exposition sponsored annually by the makers of dairy plant equipment.

Livestock Team Prize Winners

The Big Red football team weren't the only ones to bring honor to Cornell during the past weeks. The Intercollegiate Livestock judging team at the Baltimore Fat Stock Show were also victors by an impressive margin. They had a score of 3254 points which was 110 above their runners-up, West Virginia.

Joe Pendergast was high individual; Hugh Evans, third; and Morris Gardner, fourth, was also high individual in sheep.

The other teams placed in the following order: West Virginia, North Carolina, Virginia, and Pennsylvania State.

In addition to the honor of winning, the boys brought back a \$100 check as first award. They are using the money to defray expenses of the trip which included not only the Stock Show, but a visit to several of the outstanding livestock farms in Southern Pennsylvania and northern Maryland.

Dairy Team Wins Honors

The Cornell dairy product judging team placed first in the recent intercollegiate contest held September 21 at the Eastern States Exposition in Springfield, Mass. The contest is sponsored annually by the Eastern Division of the American Dairy Science Association. Coached by Prof. E. S. Guthrie '12 and W. E. Ayres '27, the team, composed of H. Webster '38, R. Keane '38, and J. Brereton '38 with H. Dissly '38 and S. Freedman as alternates, led a group of ten colleges to take the team trophy for the first time in Cornell's history. Among

the competing teams were Maryland, West Virginia, Penn State, Ohio, Massachusetts, Connecticut, New Hampshire, Vermont, and Toronto.

H. G. Webster of the Cornell team captured individual trophies for being both high man in the contest and winner of the milk judging.

Our 4-H Delegate Back From Kansas

Richard Turrell returned recently from the National Country Life Conference held at Kansas State College. Two hundred colleges and secondary schools were represented from twenty-seven states, principally from the mid-west, although there were representatives from Massachusetts, New York, Pennsylvania, Kentucky, and West Virginia.

The theme of the conference was "Conservation and the People". Turrell attended a discussion on "Relief, Youth, and Unemployment". Machinery has been one of the factors in unemployment it was decided.

Future of young folks on the farm was discussed by Prof. Sanderson of Cornell. Trend of farm boys to the city has slackened but the leaders are still going. The ultimate solution seems to be that young people living on small farms will do part time work in the city.

Dairy Cattle Judging

Team in National Contest

James B. Outhouse '38, a member of the Cornell Dairy Cattle Judging Team, took fifteenth place in the collegiate judging contest held Oct. 9 at the National Dairy Show, Columbus, Ohio. He and his teammates, Roger N. Hopkins '38 and John R. Merritt '39, competing against seventy-two men from twenty-four colleges from all over the country placed eleventh, ten places behind the winning delegation from Texas A. and M., but with the highest total score of any Eastern team. The team was accompanied by Professor E. S. Harrison, coach, and Robert W. Markham '39, alternate.

The Second Annual Percheron Show, held in conjunction with the National Dairy Show, also attracted many entries. Among them was a yearling filly, owned by Mrs. Max Dreyfus, Webster, N. Y., but exhibited by Robert Watt, horse superintendent of Cornell University. This filly which is of Cornell University breeding took first in her class and was made Reserve Junior Champion Mare.

Campus Chats

Science has at last come to the aid of the lowly job of leaf raking. This fall the University employees have been seen proudly marching around the campus pushing a little machine which looks much like a lawnmower. On closer inspection we found that the machine is equipped with a revolving cylinder and a set of brushes which actually pick up the leaves and throw them into a sack supported by the handles.

It seems that now there will be no danger of wearing out the leaves by raking them around; but just think of all the WPA workers who will now have to work for a different arrangement of the alphabet.

The triple combination of a Princeton football game, the inauguration of a new president, and two days vacation was too much for some of us. On going by the bulletin board on our way to classes the following Tuesday morning, we noticed an announcement dated Wednesday Oct. 12. Those who were sure it was the twelfth wondered where Tuesday had gone to, and those who were sure it was Tuesday wondered why we were having two Columbus Days. It was bad enough to have the banks closed for one day to say nothing about two.

World's Record In Egg Laying

A new world's egg-laying record for all breeds has been made by a pen of single comb white Leghorns in the central New York official egg-laying test at Horseheads.

This pen of ten hens, owned by J. A. Hanson of Corvallis, Oregon, put forth every effort for 51 weeks to reach the peak of modern supremacy. They laid 3,082 eggs or an average of 308 apiece for the official mark, more than a hundred better than the previous record.

On a point score used in the test, they earned 3,297.80 points, or an average of 289 points. To gain one point, eggs must weigh two ounces apiece, or 24 ounces a dozen. This record surpasses all in more than a quarter-century of egg laying tests.

Sixty-three pens, representing 14 states from California to Massachusetts to Missouri, competed at Horseheads during the 51-week official year just ended.

Electropure Milk

By Harold Smith '38

FOR curling our hair, for burning our breakfast toast, for climbing to the tops of our skyscrapers, for illuminating our pitch black mines, for a thousand and one things, we depend on electricity. Of the variety of uses being found for electricity, one of the newest is for pasteurizing milk.

Last summer I had the opportunity of working for a small milk company and seeing one of these electric pasteurizers in operation. The actual heating is performed by the passing of a 220 volt electric current directly through the milk as it flows between two electrodes. The electrical resistance built up in the milk heats it to about 163 degrees Fahrenheit at which temperature it remains for fifteen seconds. It is then hurriedly pumped over a series of water and brine coils which cool it to about forty degrees Fahrenheit. The finished product comes to the bottler as "electropured" milk.

The heart of the whole apparatus is in two gas-operated control thermometers, one of which controls the temperature of the milk as it flows between the electrodes, and the other of which records the temperature on a circular chart. The machine is almost human in the quickness with which it will respond to a very slight change in temperature. If too high the pump will speed up to push more milk through and thus bring the temperature back down to normal. If too low it will slow down until

the normal temperature of 163 degrees Fahrenheit is again reached. Large variations are uncommon, for if one does occur the machine will automatically shut itself off. The housewife who has tried to heat milk and suddenly found it sticking to the sides of the pan will appreciate the advantage of a constant temperature.

IN addition to the automatic temperature control there is a hand operated valve which also regulates the flow of the milk. This merely supplements the work of the thermometers and makes it possible for the operator to regulate the pasteurizer according to the temperature of the raw milk. Commonly in this method of continuous pasteurization the morning's milk is not cooled but run through while still warm. The experienced operator can and must estimate fairly accurately how far open the valve should be for the particular milk he is pasteurizing.

One of the most interesting things about this pasteurizer is the fact that it will not heat if pure water is run through it, but if a handful of salt is thrown in the water it will heat up, as the salt forms a conductor for the current.

This method of pasteurization has the disadvantage of being slow and not adapted to handling large quantities of milk. Four hundred quarts an hour is about maximum capacity. But with improvements electrical pasteurizers may still find a place in

large plants.

FOR the small bottler, however, it has certain advantages which more than compensate for its disadvantages. In the first place no steam boiler must be kept fired and no large storage vats are necessary as the milk can be pasteurized as soon as delivered to the plant. Also the milk is heated for such a short space of time that, if the temperature is properly regulated, there is little danger of affecting either taste or cream line.

The advertising of milk as "electropured" has a sales appeal which is as interesting as it is effective. One kind old lady, very much interested in the method, wanted to know if it actually electrocuted the bacteria. One mother on her doctor's order got some "electropured" milk for her baby, but was afraid to use it because it tasted so much like raw milk she was sure it hadn't been pasteurized. When once assured that it had been pasteurized she would have nothing else.

There is always a certain amount of skepticism about the adoption of any new method, especially in the handling of food products. The pasteurization of milk by the "electropure" process is approved by the State; and the customer realizing this and having once tried "electropured" milk is usually very reluctant to go back to other methods of pasteurization.

Prof. Morrison Tells of World Trip

At a meeting of the Round-Up Club Thursday, Oct. 21, Professor F. B. Morrison told of his round-the-world trip made last winter and spring to survey livestock conditions in the Philippines for the government.

They spent some time in the Hawaiian Islands. The Parker ranch on the island of Hawaii now includes 750,000 acres, on which cattle and many fine Arabian horses are kept.

The Morrisons made stops in Japan and China and then went to the Philippines for six weeks. Prof. Morrison says that there is no prejudice against people of mixed blood in the Philippines as they include most of the influential men in business, politics, and education. Nearly all influential Filipinos whom he met are afraid of losing American markets and of Japanese control.

He found the people kindly and intelligent, with one-third of the children in school. The women are the treasurers in every Philippine household, paying all the debts and giving the men enough for tobacco and bets on cockfights.

Professor Morrison believes the native buffalo will make a better beef animal if killed at about 2 years of age. The meat now has a bad reputation because the animals are worked 25 years before they are killed for meat.

He saw only one successful herd of American bred cows—Holsteins, Guernseys, and Jerseys. This dairyman was importing alfalfa hay from Australia, not realizing he could grow 7 cuttings of Sudan grass a season at home.

From the Philippines Professor and

Mrs. Morrison went to Hong Kong, then across the Malay States by train. At Rangoon tractors now pile teak-wood in the lumber yards where elephants formerly held sway.

The problem in India, Professor Morrison says, is to produce enough food for the country which is greatly overpopulated. He describes the pigs of India as being tall, upstanding, and producing an excellent crop of bristles.

From India the Morrisons went to Africa, then to Marseille for a brief trip through continental Europe.

In England Professor Morrison found that agriculture and animal husbandry were not as far advanced as in the United States, possibly because the British Government does not furnish comparative funds for experimental work.

November, 1937

Unraveling the Story of Rayon

In 1840, when F. G. Keller invented the process of chemically dissolving wood pulp, he could not have known the many vast fields which he was opening. From that discovery has come slowly and painstakingly all of our cellulose products, the best known of which are camera films, cellophane and rayon.

The manufacture and use of rayon has grown to be a huge industry. When it was first produced commercially it was an inferior product made to imitate silk. For many years articles made of rayon were sold very cheaply because public sentiment was against it. It then came to be used in combination with other fibers and at that time weakened both these fabrics and its own reputation.

Suddenly rayon has become the fabric to seek after and wear. It is used as celanese jersey, rich rayon velvets and heavy crepes by all the big names in Paris. In this country new rayon and celanese fabrics appear almost every day. Spun rayon is a recent development and was used this past summer to resemble linen and this fall it appears as challis. Rayon can be made to imitate all the fibers: cotton, linen, silk and wool . . . It is used in combination with these fibers to produce novel effects. Rayon "linen" does not crush or wrinkle; rayon "wool" is light in weight and has the appearance without the warmth of wool. The chemists are constantly improving on the old and producing new rayons.

In the recent American Cup race, the American boat, the Ranger, had sails made of "Cordura" rayon sail-cloth. Mr. John Scott Hughes, a yachting expert, said he believed it one of the main factors in America's winning the cup. Another recent development is Dupont's Thick and Thin yarn. It is used to gain surface interest in fabrics in many new, unusual ways. Probably at least one of your new fall frocks makes use of this new yarn.

Not only did rayon make possible many beautiful fabrics, but it also opened new fields for jobs. Because the variety of rayon fabrics is so great, their care, uses, and costs can not be told glibly and simply as in the case of our natural fibers. For each the process of washing and ironing or cleaning is different, the price

varies greatly and the uses are as numerous as the fabrics. To the ordinary housewife, sales girl or consumer, this is bewildering and at this point a new job possibility opens up. With the expansion of the industry, women with a knowledge of the rayon industry will be needed to compile consumer information. This is already being done by the American Bemberg Corporation. A representative of this company gave a lecture demonstration at a recent Farm and Home Week here. Consumer information services will need people to carry out experiments on fabrics to determine how they will wear and how to care for them.

Chemical experimentation and invention of rayons is a field that will hold a particular interest for women because it is in the field of one of her biggest interest, clothes. With a test tube, she could create a substance that would be worn next season at society's extravagant Rayon Ball.



Working parallel to the chemist is the textile designer who has the actual job of combining the chemist's yarns into new and unusual fabrics. Finally comes the dress designer who uses the new fabrics to produce the effects she wishes and who will become famous perhaps for the success of one of her rayon models.

The rayon industry is a rapidly expanding one and the possibilities of new and interesting jobs are great. A knowledge of chemistry and a desire to create and to do the unusual are the first prerequisites.

Home Economics Club has gotten under way with a bang. This year they issued membership cards with each payment of dues. These cards must be presented at all teas, dances and functions sponsored by the club. In this way it is hoped that only members will be permitted to enjoy the benefits of the club.

New Field for Home Economics Workers

Home Economics is not a newcomer in the general field of social work. However, we have heard of a particular phase of home economics in social work that is unique. It is that of the nutritionist who is employed by an administrative organization of a city's community chest to work with the institutions which benefit from the chest funds.

It was felt that the curtailed funds of the institutions during depression years made it more necessary to insure that the food budgets should not be reduced below the level necessary to secure adequate nutrition and that these funds should be spent wisely so that the best possible nutrition at that level would be obtained.

Dedicated to this purpose, a committee on nutrition and diets composed of institutional representatives, prominent physicians, and nutrition workers, was appointed and the part-time service of a nutritionist was obtained.

A great need exists for this type of work. Fiscal boards of institutions seek advice concerning basic budgets for adequate nutrition; institutional executives seek advice about diets procurable at this basic cost and public at large seeks assurance that the institutional occupants are fed on optional diet for minimum expenditure of public funds.

In answer to the request of the student body to hear the prominent speakers that come to our campus during Farm and Home Week, the student council has arranged for some of these speakers to be here each week. Consequently such people as Mrs. Roosevelt, Alice Simms and others, will speak to the students about their careers and fields of work.

It is expected that this series of talks will develop into a course offering one hour credit with the purpose of learning about various careers and the chances of entering them.

We feel obliged to compliment the Green Room on their management and efficient service. This room offers a lovely place to entertain friends and at the same time receive excellent food served in a most attractive manner. Keep up the good work.



Former Student Notes

'99

William A. Hilton, professor of zoology at Pomona College, returned in February from sabbatic leave spent on a trip around the world. He and Mrs. Hilton have two daughters.

'04

Adam S. Hewetson is the licensed tree doctor for Los Angeles, San Bernardino, and Riverside counties, Calif. His address is Y. M. C. A., Riverside, Calif.

'10

William H. Marcussen of Claremont Drive, Maplewood, N. J., has been appointed president of the Borden Company's Farm Products Division, which handles the fluid milk business of the company in the metropolitan area. He has been with the Borden Company nearly 25 years serving numerous high positions. He has a son in Cornell now.

'12

Paul Smith was recently appointed director of the bureau of milk publicity for New York State.

Jacob H. Weber is a dairy and food inspector in the New York State Department of Agriculture and Markets, working from the New York office, 80 Center Street. His home is at 16 Lawrence Street, Yonkers.

'17

H. A. Hanemann who was formerly market analyst and assistant director of the Bureau of Markets of the Pennsylvania State Department of Agriculture is now assistant manager and treasurer of the Pennsylvania Farm Bureau Cooperative Association, Harrisburg, Pa. His home address is Third Street and Woodland Avenue, New Cumberland, Pa.

I. Newton Voorhees is with the Knudsen Creamery Company, 1957 Santee Street, Los Angeles, Calif. His home address is 146 North Stanley Drive, Beverly Hills.

'20

Bertram Y. Kinsey has been advertising and public relations director of the North American Finance Corporation, 210 East Grace Street, Richmond, Va., since January 15. He lives at 3406 Noble Avenue, Richmond.

'21

A. Alvord Baker and Mrs. Baker, Elizabeth T. Cooper, are the proud parents of a daughter, Gertrude Elizabeth, born September 9. They operate the Baker family farm, (birthplace of "Daddy" George, founder of the George Junior Republic) at Freeville, R. F. D. 1.

'22

Elmer V. Shear has been transferred from Hood River, Oregon, to the United States Horticultural Field Station, Beltsville, Md., where he is an associate pathologist.

'23

Miss Marion Fish has left her position as assistant Professor of Home Economics at Cornell to serve on the staff of Washington University, Seattle, Wash.

Miles D. Pirnie is director of the W. K. Kellogg Bird Sanctuary for Michigan State College, where he is also an assistant professor of Zoology. His address is Box 174, Battle Creek, Mich.

Dorothy L. Powell was married to George P. Flint of Great Neck, July 12. They live at 43 High Street, Hempstead. Mrs. Flint is the 4-H Club agent in Nassau county.

Philip C. Wakeley graduating from the Forestry School and getting his masters in Forestry in '25 is now a silviculturist and has charge of seed, nursery, and planting experiments at the Southern Forest Experiment Station of the United States Forest Service, at 400 Union Building, New Orleans, La. His home address is 328 Brockenbraugh Court, New Orleans.

'26

Frank E. Edminster has been appointed wild life management biologist with the Federal Soil Conservation Service. He is now at Williamsport, Pa., organizing the wild life management of the Northeast region, comprising twelve states. He was formerly game management supervisor of the State Conservation Department.

John L. Shea, sales promotion representative of the Waldorf-Astoria Hotel since 1932, became executive assistant to Robert K. Christenberry,

vice-president and general manager of the Hotel Astor, on September 15.

Richard S. Snyder is with the Soil Conservation Service, Williamsport, Pa. His address is 1063 West Fourth Street, Williamsport.

'27

Irving H. Taylor has been in Washington, D. C., since March as an adjudicator with the Railroad Retirement Board. His address is 1712 Taylor Street, Northwest.

'29

Frank W. Case is technical supervisor for the American Hotels Corporation, 570 Lexington Avenue, New York City. His assistant is Wallace W. Lee '36, who as an undergraduate worked at the Willard Straight Hall desk and was later at the Hartford Club, Hartford, Conn.

Warren Ranney has resigned his position with the Agricultural Advertising and Research Service, Inc., to take charge of promoting the sales of GLF flour, cereals, and other food products for the Co-operative G. L. F. Products, Inc. Ranney's office is in the GLF Building, Ithaca.

'30

Harold V. Moon is working at the Pisgah National Forest Inn, Chandler, N. C.

Mary E. Schutt was married to William R. Beuret of Passaic, N. J., July 27. Beuret is a costs engineer, employed in Passaic. The couple spent a two months' wedding trip in Europe where they visited France, Holland, Switzerland, Germany, and Italy.

Arthur C. Stevens married Eleanor H. Crosby of Hartford, Conn., August 21. Mrs. Stevens was graduated from Wellesley in June. Stevens is a teacher at White Plains High School.

'31

Edward D. Ramage, formerly manager of the University Club of Rochester, now manages the Shaker Heights Country Club, Shaker Square Station, Cleveland, Ohio.

Robert P. Stieglitz has been appointed agency director of the New York Life Insurance Company, supervising the work of forty agents in Sullivan, Rockland, Orange, Dutchess,

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November, 1937

The Cornell Countryman

23

and part of Westchester counties. He has been with the company since graduation and has advanced quickly so that now he is the youngest of the company's agency directors.

'33

William Ellsworth Petty, Jr., of Coreys, N. Y., and Ruth Roskelly of Ithaca were married in New York City, May 15. They will live in Albany where Petty is connected with the State Forestry Service.

Ruth Rathburn is the Home Economics teacher at Morris this year in the Lewis Rutherford Morris Central School. Her engagement to U. G. Hotzenbuhler was announced last June. Mr. Hotzenbuhler is associated with the New York State Electric and Gas Company.

'34

Grace Josephine Bixby was married to LeRoy H. Hall June 25 in Syracuse. He is a heating engineer with D. L. & W. Coal Company.

Robert "Bob" Boehlecke and Mrs. Boehlecke lived this summer on the shores of the beautiful Canandaigua Lake, near the Canandaigua Farm Bureau Office where "Bob" was assistant county agent. He has now been transferred to Cayuga County in the same capacity. The family address is 31 Mary St., Auburn, New York.

Phyllis Kate Brooks and Howard M. Hodge were married September 18.

John J. Ferraro has a son, Robert Letts, born September 13. Ferraro's address is 4835 Melrose Avenue, Montreal, Can.

George L. Hunt married Doris A. Stilwell of Trumansburg August 28. Hunt is an overseer at the University sheep barns.

Harold L. Noakes married Ruama D. Ashforth of Vernon Center, August 15. Mrs. Noakes is a graduate of the School of Speech at Syracuse University. Noakes teaches agriculture and industrial arts at Moravia.

Peter I. Tack married Elizabeth Lawrence '35 September 3. Mrs. Tack has been the dietitian for two years at Dean Eaton Hall, girl's dormitory at St. Lawrence University. Mr. Tack is working for his Doctor's degree while assisting at the fish hatchery at Cornell.

'35

Anita M. Boldt is assistant dietitian at the Orthopaedic Hospital, 420 East Fifty-ninth Street, New York City.

Roy A. Paulus married Christina M. MacNair of Marcellus July 3. Mrs. Paulus is a graduate of Syracuse University and they are both on the faculty of Newark Valley High School.

James P. Schofield married Eleta M. Stilwell '35, daughter of Marvin

D. Stilwell '09, June 9 in Perry City. Barbara L. Stearns is engaged to Rodman M. Fellows '35, who is connected with the Soil Conservation Service in Ithaca.

'36

Joseph Amberg is starting his second year of teaching vocational agriculture at Portville, New York.

Barbara Crandall, daughter of Professor W. T. Crandall, and Frederick D. Garrett '33, son of Prof. Seymour S. Garrett '04, were married July 11 in Sage Chapel. Garrett is an instructor in the Zoology Department.

Charles Dykes is now with the General Electric Company in Schenectady. He is engaged to Doris Smallridge '37 who teaches in Hillsdale.

James P. Emerson married Jean C. Chase '35 September 11. They will live in Beverly, N. J., where Emerson is in the sales department of the United States Pipe and Foundry Company of Philadelphia, Pa.



Dorothy Grey has been called to Hood College, Frederick, Maryland to serve on the Home Economics Staff. She studied at Merrill-Palmer School in Detroit last year.

James E. McDonald and Mrs. McDonald (Carol C. Connely) '33 have twins, a son and a daughter, born July 23. The McDonalds live at 217 Mitchell St., Ithaca.

Francis Rosevear and Mrs. Rosevear, the former Ruth Fisher '36, are living in Cincinnati, Ohio, where Mr. Rosevear has a position with the Proctor and Gamble Company.

Catherine Stainken has a position in the School of Home Economics at Oregon State Agricultural College. She had a similar position at Cornell last year and expects to be back at Cornell next year. She was Home Economics editor of Countryman in 1936. Her address is 212 North 28th St., Corvallis, Oregon.

Nuptials were performed September 3 for Maurice A. Tomlinson and Zella M. Pendall of Marathon. Tomlinson is manager of the GLF feed store in Spencer.

Laurence M. Wood of Sidney Center married Julia L. Hulbert of Belair, Maryland on July 11. After a wed-

ding trip to Bermuda they are living at Baltimore, Maryland. Mr. Wood is now employed as a draughtsman in an airplane factory at Raspburg, Maryland. '37

Bernard Goodrich is living at 209 College Avenue and will start his work when classes resume September 30 as an instructor in Extension Teaching.

Leon Graves is continuing with graduate work and his position as lab. instructor in Meteorology.

Quincey Gregory is doing landscape construction work at his home in Pine City, N. Y.

Angelo Guglielmino had a summer position as factory inspector at Fulton, N. Y., with the Snider Packing Co. He expects to be back in Ithaca when school begins.

Leonard Gunsch is teaching vocational agriculture and Industrial Arts at the Red Creek High School.

Norman Healy is working with fertilizers for the American Agricultural Chemical Co., at Buffalo, N. Y.

Wilfred Brown is teaching vocational agriculture and Industrial Arts at Port Leyden, N. Y.

Earle B. Henley Jr., is entering the Cornell Law School this fall.

Harold Hess is going to the Graduate School of Business Administration at Harvard University.

John Hoene will be living at home and working with the Duluth Park Department of Duluth, Minnesota.

Edmund Hoffman is teaching vocational agriculture at Virgil, N. Y.

George Holochwost is doing produce inspection in New York City. He is living at 248 Ovington Avenue, Brooklyn, N. Y.

Barbara Pratt married Karl L. Smiley '38 June 1. They make their home part of the time at Cortland.

Jane Salisbury married Burton C. Parker September 4. They are living at 5968 14th St., Detroit, Mich.

James Huxtable is teaching vocational agriculture at the Sidney High School.

Herbert Johnson is working on the Agricultural Conservation program and at the present time is located at Watertown, in Jefferson County.

Tyler Kniffin is teaching vocational agriculture at Ellington, N. Y.

Mary B. Wood is organizing the first home economics department at the Andover High School.

Albert Wolfson is now an instructor in the zoology department of the University of California at Berkeley.

Byron Culver and Helen Margaret Windnagle were married June 26 at Union Springs, N. Y. He is now Farm Bureau assistant in Oneida County, located at Utica, but living in a small town nearby.

Marilyn Brown married Walter B. Manson Jr., August 7. They are living at 63 Chestnut Street, East Orange, N. J.

Elliott Johnson is teaching agriculture in Ovid High School.

Read Adams and Elaine Ogle '37, daughter of Robert C. Ogle, Extension instructor of Poultry Husbandry, were married September 4 in Sage Chapel. They are living at Catskill where Adams works with the Central Hudson Gas and Electric Company.

Virginia L. Barkhuff is teaching Home Economics in the Marlborough High School.

Orville Engst and Helen Mildred Saunders '37 were married May 15 in Sage Chapel. Orville is now teaching vocational agriculture at East Springfield.

Charles F. Fagan, former manager of the Student Agencies, is a salesman for the Burroughs Adding Machine Company, 93-95 Front Street, Binghamton.

Ruth Fenninger is attending Russell Sage in Troy this year.

Avery Gentle is agent for the New York Life Insurance and is living at 106 Catherine Street, Ithaca. He is confining his efforts to the University students and seems to be doing quite well. Last summer he sold Life Insurance around his home at Macedon.

Morris Goldberg is in the sales de-

partment of the Flower City Bedding Company, Rochester.

Eloise Grant has accepted the position of Associate Agent in 4-H club work in Suffolk county and started work October 15. Eloise was on the Countryman Board while in school.

Alden Jones is continuing his studies, working for his masters degree here at Cornell.

Elizabeth Halsey is a dietitian in the public schools of Hartford, Conn.

Al Longhouse is remaining in Ithaca this year and is working for his Master's degree while he has a position in Agricultural Engineering Department.

Clif Loomis has a job as Agricultural Conservation Agent for the Soil Conservation Department.

Cornelius Lucey is working with the Gas and Electric Association in Ithaca.

Stratton McCargo is in the dairy department of the Fairmont Creamery Company at Buffalo, New York.

Donald MacLaury was a helper at the State Game Farm from June 1st to September 1st, and he is now at Iowa State College where he has a Research Fellowship in Poultry.

John Manning is assisting his father in a retail feedstore and is an assistant manager of four dairy farms in Orange County.

Gordon Mereness is teaching agriculture in Cherry Creek.

Gerald Maier is teaching agriculture at the Marlboro Central School. Geraldine Mattern is continuing her studies in child guidance at the Merrill-Palmer School in Detroit.

Walter Millard married Harriet O'Leary of Varna September 14. They will live at R. D. 5, Ithaca, New York, where Millard will be associated with the Inlet Valley Farms.

Frederic Morris is teaching vocational agriculture and industrial arts at Rushford, N. Y.

Verner Ogi is teaching vocational agriculture. His present address is Ontario High School, Ontario, New York.

Clarence Palmer is at his home in Missouri where he is helping his father manage their farm.

Edward Penczek is an assistant in the Dairy Building where he is doing graduate work.

Jessie Reisner is the Home Bureau agent in Delaware county.

Ruth Sharpe is a 4-H Club Agent-at-large, working from the office in Ithaca in various counties of the state.

Frances Spano is taking graduate work at the Merrill Palmer school in Detroit. She also has an assistant fellowship there.

Edwin R. Webster married Mary D. Bull '37AB September 5. The couple live at 20 Brimmer Street, Boston, Mass., where Webster is assistant steward at the Bellevue Hotel.

IT'S NOT TOO LATE!

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